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by the author

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THE

PROBLEMS AND FUTURE

OF

PHARMACY IN GERMANY.

BY

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It appears to be of interest and utility to take notice of the problems which are now being discussed in Germany, where pharmacy has been, for over two centuries, the main cultivator of natural sciences, and as such, and as a branch of the healing art, has attained a position not reached in any other country, and where not only its sphere and import, but even its very existence seems to be at stake. Though the political, social and industrial conditions of Germany and the other European countries differ in many respects from those of North America, it will be found that the aims and interests of pharmacy, and its relations to other trades, are the same everywhere; and for this reason, the crisis into which pharmacy has entered in Germany, merits a wider attention. With the radical changes of popular views, in consequence of general intellectual advancement and the popularization of all branches of physical and sanitary sciences and of rational medicine, the former state and practice of medicine, and also of pharmacy, have undergone considerable changes in Germany and in Central Europe. Although difficult to comprehend outside of Germany, the most important necessary consequence has been the removal of all restrictions formerly placed, on the part of the State, upon the practice of medicine and hygiene, in Germany as well as in Switzerland. Medicine, in consequence of its extent and its unlimited sphere of application, has separated into several parts, which in study as well as in practice, have more or less become specialties, while some branches have become the common property of all well educated, and have occasionally been successfully practised also by others than physicians. Notwithstanding these innovations, modern medicine progresses; "with the higher aim that its object is not ^{only} so much the cure, as ~~rather~~ ^{but also} the prevention of disease." (Virchow.) As another consequence of these tendencies the fact was lately stated, that "modern medicine has ceased to resort to and find its centre of gravity in the

pharmacies." (Pettenkofer.) How far these assertions represent the reality, may be judged not only from the pharmaceutical papers, but far better from the number and quality of popular science publications covering the field of hygiene and sanitary and medical sciences ; the widely-known popular works which have passed through many editions and translations, of Professors Bock and Reclam, of Leipzig, may be mentioned as instances.

The medical schools have skeptically discarded a large portion of the old array of remedial agents, and retained comparatively few substances of certain chemical composition and hence proportionable with exactness ; these are more and more administered by subcutaneous injection or in minute concentrated doses, and in forms which are more handsomely prepared by the confectioner than the apothecary, while the preparation of the chemicals has been transferred from the laboratory of the latter to that of the manufacturer,* so that the sphere of the apothecary has been materially narrowed and simplified, and a chemical knowledge, though always desirable, is not in the same degree requisite as heretofore.

When, therefore, we hear of a decline of pharmacy and of a decrease of its efficiency in Germany and other European countries, as yet not a degeneration of pharmaceutical education and proficiency, nor of the status of pharmacy, is intended ; but principally the reaction of the conditions briefly sketched above upon pharmacy. An increase of medical skepticism and a lessening in the public mind of the value of remedies must certainly be followed by the lowering of the importance of pharmacy. Medicine cannot well be subject to such a retrogression, because its successful practice lies in an unalterable path, concerning the instability of human nature and life, and presupposes, besides actual knowledge, an individual fitness, technical skill, experience and judgment, with which the educated physician can always successfully encounter the ignorant or half educated competitor, while the competition amongst pharmacists scarcely exists upon the scientific, but almost exclusively upon the mercantile field.

The future status of pharmacy in Germany, as influenced by these factors, and in consequence of the rapid intercourse of nations and the generalization of ideas, their influence upon pharmacy in other

* See synopsis of lecture in *Druggists' Circular*, 1874, March, p. 57 ; and *Pharm. Jour. and Trans.*, March 28, 1874, p. 781 ; also Prof Redwood's lecture on the "Past, Present and Future of Pharmacy." *Ibid.*, April 25, 1874, p. 863.

countries has been for some time the subject of deliberations in the pharmaceutical journals and in the meetings of pharmaceutical societies. To this must be added the pending abrogation of the protective grants, an institution antiquated in its origin and nature, but which has been one of the most important factors through which German pharmacy has reached its high status and its pregnant co-operation in the advancement of the physical sciences. The nature of these grants has been explained by me in a former paper, entitled "Pharmacy in Prussia and the German Empire."* Latterly, besides many reforms in relation to arts and industry, the grants and concessions have been abolished, and since the release of the practice of medicine, that of pharmacy appears to be merely a question of time and a financial problem, the solution of which is attended with so many difficulties, because upon these grants large amounts have been invested, which, with the legal abolition of the former, would be lost as far as they exceed the real value of the business. This question of national economy, which is now being discussed and is under consideration before the government and the legislature (Reichstag) in Germany, has been apparently satisfactorily solved in Sweden in this manner, that every newly established pharmacy has to contribute a certain sum, in accordance with fixed principles of valuation, towards the redemption of the capital invested in pharmacies, as far as its value is lessened in the same place. It is probable that a similar way will be chosen in Germany for the inevitable solution of this problem.

These are, in brief, the principal causes of impediment to the progress and prosperity of pharmacy in Germany, and which have tended to keep talent and capital from being invested in pharmaceutical pursuits, and to induce many young and promising pharmacists to leave their chosen avocation for others more remunerative.

Among the recent publications on this subject, those of three pharmaceutical authorities, equally prominent by experience, knowledge and standing, have attracted a wide attention, namely, those of Professor Dr. Phoebus, of Giessen,† of Professor Dr. Hlasiwetz, of Vienna, and of Mr. W. Danckworrth, of Magdeburg, formerly Chief Director of the North German Apothecaries' Association. The following synopsis of the remarks of the two last-named men may

* American Journal of Pharmacy, 1871, p. 389.

† Pharmac. Zeitung, Nos. 17, 35, 47, 67, 85 and 89, 1873.

serve to elucidate more fully their views of these vital questions and their bearings upon the future of pharmacy in Germany.

Prof. Hlasiwetz, formerly an apothecary, now Professor of the Imperial Polytechnic School of Vienna, in a recent lecture on Modern Pharmacy,"* said in substance :

" Until recently, chemistry had its ablest and most useful representatives among the pharmacists, and for a long time this profession has pre-eminently supplied the chairs of chemistry of the universities with professors to whom we owe the vast amount of labor and discoveries which were necessary to bring practical and theoretical chemistry to its present scope and position. But this has greatly changed by degrees, the consequent rapid progress has called forth a chemical industry of the most varied description and extent, which, in its rapid strides has substituted the methods of manufacturing on a large and commercial scale for those on a small scale in the laboratory of the pharmacist. This change in the scope and drift of pharmacy has deprived the pharmacist of one of the principal objects and profits of his legitimate business, and since the fact has become fully established that he cannot enter into competition with the manufacturer, neither in regard to quality or price, there is nothing left to his share than to dispose and retail the products of the former. Not only the whole series of medicinal chemicals and alkaloids are now supplied by the manufacturer cheaper and, as regards the latter substances, better, but also those pharmaceutical preparations which belong pre-eminently to the province of the pharmacist; as, for instance, fluid extracts, tinctures, syrups, ointments, plasters, etc.

" Since the inauguration of this sweeping change dates the decline of the so-called pharmaceutical chemistry, and all that the pharmacist yet applies is a moderate degree of analytical skill for the establishment of the identity and quality of the preparations as supplied by the manufacturer. And even this limited sphere of proficiency is encroached upon by the manufacturers by offering on the labels of their preparations brief instruction for ready tests, and by supplying pure and ready-made reagents, so that the tests may be made by any skilled and informed person.

" Our schools and universities still furnish a sound pharmaceutical education and a stock of chemical knowledge; but the truth is that

* *Pharmac. Zeitung*, No. 8, 1874.

these attainments, as a rule, do not bring fruit, for the reason that pharmaceutical practice has ceased to afford any longer the former compass and opportunity of application, nor a sufficient impetus to practically cultivate the acquired proficiency.

“ Moreover, the advanced state of rational medicine has discontinued the use of many remedial agents, and has greatly limited not only the list of *materia medica*, but also the former liberal administration of medicines ; the consequence of this restriction is a decrease of the legitimate business and income of the pharmacist ; being formerly a remunerative pursuit, it hardly furnishes, any longer, a respectable living to a great many highly-educated men, and we see, therefore, the pharmacist enter more and more upon mercantile resources for subsistence, with the aim to gain, on the other hand, as a dealer, what the professional scope of his business falls short to supply ; he enriches his stock with homœopathic and with patent medicines, and enters into competition with the dealer in fancy articles, with the perfumer, the confectioner, etc.

“ The business of the pharmacist depends for the future largely upon the drift of the manufacturing business, which, when it should also extend its aim and scope to the production of the medicinal substances in ready-dosed and elegantly-prepared forms, will deprive the pharmacist, more or less, from the last remnant of his proficiency. This inroad has already commenced, and bids fair way to an increasing extent and to success ; it tends to relieve the physician from the necessity of prescribing so many grains of Dover’s powder, of quinia, of calomel, etc., to be rubbed up with sugar and divided into so many doses ; he will merely have to direct his patient to buy a number of dosed capsules or tablets. He will soon find all the chief formulæ of his dispensatory provided in elegant forms and envelopes, disguising smell and taste, and both the physician and the patient will gladly dispense with the old, repulsive forms of mixtures, decoctions, powders, etc. The great number of vegetable drugs of uncertain value and variable quality, will be discarded, and will be replaced by the active principles, obtained from them in a pure and stable form, so that the *materia medica* of the rational physician will henceforth be like that of the homœopathist, ready prepared and dosed, and all emanating from the manufacturing establishment.

“ When system and method will extend and consummate this mode of administration of the remedial agents, nothing will be left of the

pursuit of the pharmacist than a retail dealer of the products of the manufacturer of medicinal articles."

Mr. W. Danckworr^t expresses himself in an article "On the Future of Pharmacies,"* thus: "I believe that after forty years pharmacy will have greatly changed its physiognomy; I do not entertain pessimistic views, and consider it an honor to have served for forty years in a profession which I esteem highly, but when I compare its present condition and prospects with those of forty years ago, I cannot but admit that pharmacy is on the decline, and will henceforth degenerate far more rapidly. But thirty years ago chemistry and botany were pre-eminently the sciences of the pharmacist; Berzelius, H. Rose, Liebig, Fresenius, Berg, Henkel, Mohr, and many others of equal fame, emanated from pharmacy. Now-a-days, chemistry has grown in extent and volume so vastly, and its practical application embraces such a wide compass, as completely to leave behind the pharmacist's sphere. Yet the pharmacist has maintained a comparatively high status of chemical knowledge and learning, and a comparatively wide compass of attainment is still required from him. But the fact is that these accomplishments have to be attained mainly to enable him to pass the examination which the State makes yet obligatory; after this, he has not any more the old arena to practically apply and profitably enlist his attainments, nor the former impetus, so that, in many cases, the knowledge acquired at the universities is gradually lost for want of application and encouragement. Formerly, the pharmacist used to be the legitimate expert in all forensic investigations; now the extent of knowledge and experience required are such as to exclude him in preference of the professional chemist. The pharmaceutical laboratory of yore has become a myth, and we must admit that most of the medicinal chemicals and pharmaceutical preparations can be obtained cheaper and better when manufactured on a large scale; many of them are now furnished by the manufacturer already dosed and labelled for ready dispensation and retail sale. And when we compare the prescriptions of our days with those of forty years ago, what a change, what a remarkable simplification! The whole array of the old-fashioned decoctions, infusions and mixtures have been discarded; morphia, codeia, quinia, digitalin, chloral-hydrate, atropia, and a number of other principles are the consummation of *materia medica*, and even the prescriptions for

* *Pharmaceut. Zeit.*, No. 20, 1874.

these disappear more and more from the pharmacies, inasmuch as the physician carries their minimal solutions in his pocket for ready administration by subcutaneous injection, or orders them in tablets or sugar granules as supplied by the manufacturer or confectioner in lieu of the pharmacist.

“Moreover, the rapid progress of general culture, of the knowledge of the rational principles of life and health and the conditions of their maintenance, of the sanitary sciences and of hygiene and medicine, exercise a considerable influence upon the decrease of the use of medicines, for it cannot be denied that knowledge and culture counteract the principles and conditions upon which, to a great extent, the prosperity of pharmacy rests.

“When we have witnessed such changes within the comparatively brief space of forty years, who has the assurance to predict what, or if anything, will be left of pharmacy after another equally progressive lapse of forty years?”

It is not the aim of this essay to parallel the conditions and prospects of American pharmacy with those just described, nor to determine whether and how soon the same questions may come up here, or whether the present state of American pharmacy really justifies the exalted views of the future, as occasionally expressed in valedictories and similar addresses. In its trade relation it has practically the advantage over German pharmacy, inasmuch as it still stands upon the basis of a commercial trade, and cannot therefore be injured in a similar manner by being displaced from a professional basis, secured by a noble career of usefulness and achievements through more than two centuries.

As a natural consequence of the growth and extent of sciences, and the increase and diffusion of learning and a correcter knowledge of nature, which is the tendency of modern times, we must view the fact that an enhanced general, as well as special, education is becoming more necessary in all pursuits and gives the impulse to innovations and reforms, particularly in those pursuits which are based upon the knowledge of the laws of nature, and upon the application of the principles of physical and sanitary sciences, and that this agitation is felt in medicine and pharmacy, precisely as in other circles.

After the first abortive legislative attempt in several States of our Union in demanding directly, and without previous preparation, a higher qualification, the education of pharmacists, and in consequence

thereof a superior status of pharmacy, have made successful progress, and increased facilities for attaining this aim have been inaugurated by the establishment of, and increased attendance at, the various pharmaceutical schools.* In this advance movement, pharmacy stands, however, by no means alone; generalization and unity of sciences on the one hand, and education, scientific knowledge and higher intellectual culture on the other, are, as already stated, the demands of our time, and this tendency pervades in our country, also all classes of its population and all pursuits, and is practically exemplified in the increase and prosperity of all higher educational institutions,—the medical, polytechnic, commercial and other colleges,—and in the entire literature of the present day.

Pharmacy in this country will therefore, probably meet with fewer difficulties on its high road to improvement, and the less so, as it is in the happy position of profiting by the pharmaceutical experience and acquisitions of older countries, and particularly of Germany, without having to undergo the struggles and errors of its gradual development extending over two centuries. The problems which it will inevitably have to encounter with the progress of time and civilization, I have briefly referred to above, and they are more fully stated in Mr. Danckwortt's and Prof. Hlasiwetz's papers; aside from other more technical and less important arguments, they have been felt here likewise for some time, and have been repeatedly and timely expressed,† but appear not to have received due consideration.

The lively interest taken by the American people in progress and

* If no other, at least one result of high value must be acknowledged to be due to the continued agitation for, and the enactment of, laws regulating the practice of pharmacy, namely, the increased attendance of the pharmaceutical pupils at the courses of the colleges of pharmacy. Although this attendance is not yet dependent upon a preliminary examination and qualification, and though the want of sufficient primary education and knowledge is *a priori* prejudicial to the full value of a course of theoretical study compressed into so short a time, capable and assiduous young men will find at least the path pointed out, and receive the incitement for the further acquisition of knowledge, while American pharmacy will, for the next generation, be supplied with new productive heads and hands for its scientific continuance

† Dan. C. Robbins, Annual Address, Proceedings Alumni Association, N. Y. Coll. Pharm., 1872, p. 34 and *ibid.*, 1873, p. 30.

Chas. C. Fredigke, in Chicago Pharmacist, 1874, p. 36, and Am. Journ. Pharm., 1874, pp. 209 and 265.

Dr. Streit, in Chicago Pharmacist, 1874, p. 72.

the questions of the times, its acceptation for new ideas and their practical application leave no doubt that the modern popularized teachings of hygiene and of the sanitary and medical sciences, which are promulgated by the advanced schools of medicine and by popular literature,* as well as of medical skepticism will here find a fruitful soil, just as homœopathy has found its adherents not merely among the ignorant, but rather among the wealthier and educated classes of society. The consequences of such a popularization of a correcter knowledge of hygiene and of rational methods of preventing ~~disease and~~ preserving and restoring health without the former resort to unwise and excessive medication, must be the same here as in Europe, as far as the material emoluments of the pharmaceutical pursuit are concerned, and inasmuch as they will in time greatly diminish the income of the pharmacist, they will also be in direct antagonism with the demands of modern times for higher education, which requires increased expenditure of time, labor and money. All legislative restrictions and regulations will prove one-sided and without real and permanent value, as long as they aim to raise the claims for a higher qualification and standard only, without affording, on the other hand, some guarantee for a sure and remunerative application of the higher proficiency, and for the conditions necessary for the material prosperity of the practice of pharmacy. Compared to the physician and the tradesman, the pharmacist occupies an exceptional position ; the former applies his individual knowledge and skill without investment of capital or risk, and without any restriction ; the merchant chooses his wares according to demand and want, and can control his investments quantitatively and qualitatively ; he employs laborers or clerks with less knowledge and without responsibility ; his wares usually retain their value, and are less prone to deterioration. In this material age and concrete and practical country of ours, there cannot be expected for any length of time, an acquisition of talent and skill, or a permanent and steady elevation of a calling whose resources appear to be everywhere on the

* The Sanitarian, the Herald of Health, and the Journal of Health, are monthlies published in New York. See, also, the annual Proceedings of the American Public Health Association ; also, Youman's Popular Science Monthly, No. 10, p. 422 ; No. 12, p. 665 ; No. 22, p. 421, and numerous similar publications.

decline,* and which involves an amount of time, resignation and responsibility as no other pursuit requiring a similar amount of learning, and which, for superior attainments and proficiency, does not offer an adequate equivalent in the shape of pecuniary compensation.

These are some of the problems which American pharmacy will likewise have to encounter sooner or later, and in the discussions of which the recourse to the whole truth will unquestionably prove the best remedy for the evils of imperfectly stated truth. They certainly deserve earnest consideration and invite our congenial interest in the pending strivings of pharmacy in Germany for its existence and continuance. Whatever may be the future fate of pharmacy, that of Continental Europe has the high merit of having fulfilled its mission of culture, and particularly in developing and applying the natural sciences, and mainly chemistry, and that its achievements are not perishable, but on the contrary will forever be useful in the further evolution of the healing art and of applied chemistry in general.

* The practice of our profession is becoming more arduous,—its scientific relations more complicated as civilization and science advance, while its legitimate rewards diminish, because the scope of the business contracts, while competition increases and it is evident that, unless we can arrest or overcome these, we cannot long retain in our ranks a superior or desirable personnel. The character of any pursuit depends upon the men who fill it, and we cannot have men of culture and attainments unless they are adequately rewarded. (D. C. Robbins, annual address, N. Y. Alumni Assoc., 1872-73.)